SST (70-50°S) response to a 1 σ SAM change

Problematic for prediction/attribution studies on interannual to decadal timescales
Mean simulated state is essential

Ferreira et al. (2015), Kostov et al. (2016)
Implications for carbon cycle
Surface CO₂ flux anomaly

High-frequency wind forcing
- Monopolar response

Ozone-driven (decadal) forcing
- Tripolar response

→ Combination of the multiple ocean times and carbon chemistry
→ Which response is observed?

Attribution/prediction SO CO₂ sink:
good estimates of real ocean timescales + representation in climate models